

Dispelling the Danger of Monosodium Glutamate (MSG)

Sam Pomichter

The Origins of MSG

Monosodium glutamate, or MSG, is a powerful flavor enhancer. The flavor produced by MSG is termed “umami,” a Japanese expression roughly translating to “tastiness.” As a flavor enhancer, MSG increases the total taste of food, boosts certain flavor characteristics in meat and poultry such as saltiness, and emits no secondary aroma. MSG can be synthesized utilizing the natural compounds created by fermenting starches, beets, and molasses.

Its creation in Japan proved revolutionary and created a massive market demand in the East. Upon the arrival of MSG to the U.S. it was initially widely enjoyed, but Mao Zedong’s seizure of China changed the Western sentiment towards the Chinese public and a slew of inaccurate claims about the dangers of MSG arose. Racially biased studies perpetuated stigma towards MSG for over half a century; only recently have the claims of its dangers been revisited, coinciding with an increase in interest surrounding its flavor-building qualities¹.

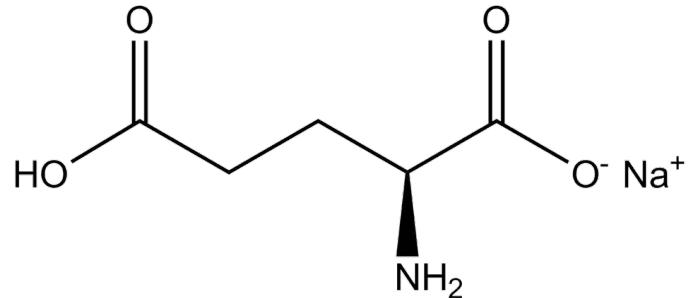
Maligning MSG

Many studies arose in the late 1960s warning about the effects of consuming MSG and its neurodegenerative nature. John W. Onley was the principle investigator on a series of these papers containing skewed results. In these studies², neonatal mice were injected with a high dosage of MSG subcutaneously. These mice would experience cell death in several regions of the brain and specifically the hippocampus. Other symptoms included stunted skeletal development, marked obesity, behavioral outbursts, and female sterility.

These early studies regarding the effects of MSG on the body had very similar designs, and each experiment portrayed the substance as more dangerous through the administration method, high dosage, and the use of infant subjects. Administration of MSG through injection does not accurately model its method of consumption by humans; recent research³ suggests that it is impossible for MSG to pass the blood-brain barrier upon being consumed orally. There has not been any evidence to date that MSG can cause cell death through oral consumption. In addition, these early studies utilized neonatal mice⁴ and not adult mice; this may have been done to insure the subject’s susceptibility to the substance. Data from these mouse trials conducted by J.W. Onley and other researchers have not translated into subsequent studies conducted in humans.

Debunking the MSG Myth

In double-blind placebo-controlled dietary studies with human subjects, MSG exhibited no carcinogenic effects nor hippocampal damage, due to the fact MSG cannot cross a functioning blood-



The chemical structure of monosodium glutamate (MSG), a flavor enhancer. MSG’s potential health defects have been called into question in recent research.

(D.328, (2007) L-Monosodium Glutamate [142-47-2] [image], available: https://commons.wikimedia.org/wiki/File:L-Monosodium_Glutamate.svg [accessed: 29 March 2019].

brain barrier. Although no neuron death was exhibited in human trials, a subset of participants still received adverse symptoms upon the oral consumption of MSG. In other experiments these MSG-sensitive individuals have participated in double-blind placebo-controlled experiments⁵ to determine the correlation of their symptoms to the consumption of MSG.

These experiments have indicated that the frequency of symptoms was low and inconsistent. Studies have also shown that MSG consumption does not contribute to its presence in mother’s milk or any penetration of the placental barrier. Major organizations such as the EU’s Scientific Committee for Food and the FDA have rejected the necessity for a recommended daily limit of MSG consumption and warnings for pregnant women, although the FDA still recognizes that a small subset of people are susceptible to the collection of symptoms known as the MSG Symptom Complex.

Lessons Learned

The trepidations of the Western world regarding MSG stem from unrepeatable results depicting neuronal death in mice and racial sentiments towards Asian-American communities. Although MSG has multiple applications within non-Asiatic cooking, it is still closely associated with Asian food. Due to its stigmatization the medical applications of MSG have yet to be fully tapped. One such application is the use of MSG for those who lack appetite to enhance the palatability of food.

The demonization of substances utilized within minority communities, whether in cooking ingredients or psychoactive chemicals, has hindered the cultural development of the United States.

In addition, the inclusion of institutionalized or personal bias can compromise the empirical nature of science and lead to the downfall of research and cultural progression. The vilification of MSG, then, presents a greater issue within the scientific community against the backdrop of racial discrimination throughout the twentieth century.

SOURCES

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